

6-2

Reading to Learn Mathematics

Solving Quadratic Equations by Graphing

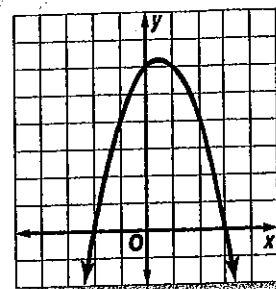
Pre-Activity How does a quadratic function model a free-fall ride?

Read the introduction to Lesson 6-2 at the top of page 294 in your textbook.

Write a quadratic function that describes the height of a ball t seconds after it is dropped from a height of 125 feet.

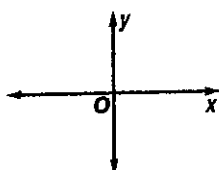
Reading the Lesson

1. The graph of the quadratic function $f(x) = -x^2 + x + 6$ is shown at the right. Use the graph to find the solutions of the quadratic equation $-x^2 + x + 6 = 0$.

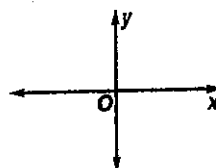


2. Sketch a graph to illustrate each situation.

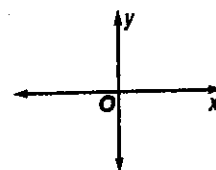
- a. A parabola that opens downward and represents a quadratic function with two real zeros, both of which are negative numbers.



- b. A parabola that opens upward and represents a quadratic function with exactly one real zero. The zero is a positive number.



- c. A parabola that opens downward and represents a quadratic function with no real zeros.



Helping You Remember

3. Think of a memory aid that can help you recall what is meant by the *zeros* of a quadratic function.